CHAPTER 6

INSTRUCTIONAL METHODS

INTRODUCTION

The definition of instructional methods is "an educational approach for turning knowledge into learning." Instructional methods are the "how to" in the delivery of training. You have all heard the old saying that there is more than one way to skin a cat. Likewise, there is more than one method to use in training your students. The methods used in any learning situation are primarily dictated by the learning objectives decided upon by the course developers. In many cases a combination of methods are used to intensify the learning experiences. As an instructor, you need to understand the following methods and your responsibilities in using them: lecture, lecture with audiovisuals, lesson, demonstration, role-playing, case study, and discussion. The lesson method and the demonstration method are the two most commonly used in Navy training. However, for purposes of this chapter the methods are discussed as sequenced above.

LECTURE

The lecture method is an instructional presentation of information, concepts, or principles. Its main purpose is to present a large amount of information in a short period of time.

The lecture method is an efficient way to introduce a new topic of study or present background material students need for future classes. A lecture allows instructors to present a subject to a large audience because they use no visuals and there is no interaction between the students and the instructor. In fact, with the use of closed-circuit television, audience size is essentially unlimited. A lecture may be presented to thousands of persons at a time through the use of the closed

circuit television (CCTV) system.

Since the lecture method depends primarily on student listening and note-taking skills for the transfer of learning, you must have effective speaking skills. Your speaking skills can help you overcome some of the major shortcomings of no active student participation.

In preparing to deliver a lecture, set clear-cut goals and objectives. Make sure you have an in-depth knowledge of the subject matter, and find realistic examples and analogies to use with your explanations. As with any presentation, apply the laws of learning in your preparation and delivery.

Remember, the only feedback you will get is the nonverbal communications from your audience, if you can see them. Since your audience will quickly get bored with no active part in the instruction, your lecture should last no more than 30 minutes. Lectures should be short, well organized, and to the point.

LECTURE WITH AUDIOVISUALS

A lecture with audiovisuals includes visual and/or audio aids. Navy training frequently uses this instructional method of presenting information, concepts, and principles. As you learned in the “Principles of Learning” topic, most learning takes place through the sense of sight. It follows then that all students must be able to see the visuals being used, which will limit class size.

The visual aids you use can reduce the amount of explanation time required for students to grasp concepts, structures, and relationships. You simply cannot get some ideas across to students without the use of visual aids. For example, think how difficult an explanation of the operation of the internal combustion engine would be without the use of visual aids.

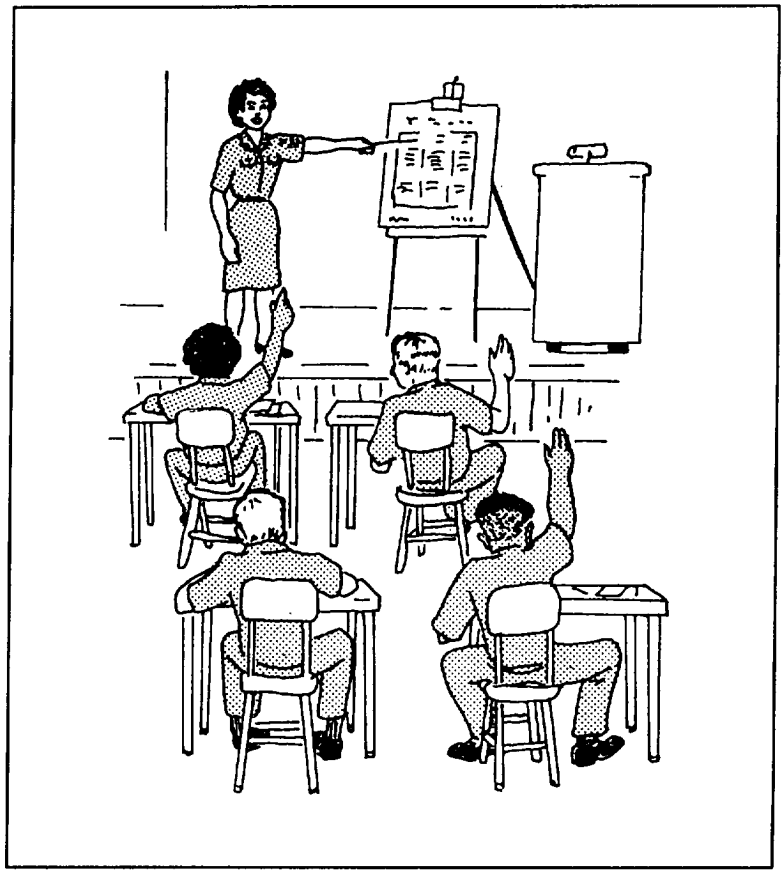
When you use the lecture with audiovisuals, you must prepare properly. That includes practicing with the actual visual aids in the place you will be using them. Plan your timing of the use of visual aids to keep the students' attention and to stress important points. Since your explanation of the visual aids will require you to use effective instructor techniques, decide which ones you will use. Then mentally rehearse those techniques and practice using the visual aids until you can present your lecture smoothly.

LESSON

The most often used method of classroom instruction within Navy training is the lesson method. The lesson method is interactive in nature. This method not only includes audio/visual aids, it involves the use of two-way communication. The lesson method involves exactly what its name implies--teaching a lesson; and teaching a lesson involves much more than just presenting information. When using the lesson method, you will follow a lesson plan written by curriculum developers. You will incorporate questions into your lesson to encourage student thinking and check for understanding throughout the lesson. Even though you have a lesson plan, you must anticipate student questions. That means you must have a thorough

understanding of the subject matter.

The lesson method involves the use of training aids to support and clarify the main teaching points of your presentation. Follow the same procedures used in the lecture with audiovisuals method: prepare, plan the timing of their use, and practice. To strengthen the effect of training aids, ask questions that require students to analyze and evaluate concepts and principles while referring to the audiovisual materials. Your use of audiovisuals with the lesson method dictates a limited class size of between 5 and 40 students. Less than five presents a problem in generating meaningful class participation. Besides the problem of poor visibility of training aids, more than 40 students presents the problem of keeping students actively involved in the lesson.



Because the lesson method of instructing is versatile, it may employ many different instructor techniques. Regardless of the techniques used, the lesson method involves three basic elements: the introduction, presentation, and review or summary. You have specific responsibilities for each element.

In the **introduction,** you must create interest in your topic and establish why students need to pay attention and learn the material. Begin by introducing yourself and telling about your background experience with the topic. Explain the objectives of the lesson and stress the importance of the students' being able to master them. Remember the laws of readiness and effect as you prepare your students for learning. Motivation is the key. If you can help students see how they will benefit from your training, you give them reason to pay attention and learn. Get the students to share experiences that show why they need to learn the material. That helps to establish their responsibility for learning. Ask questions to break down barriers early in the training session. Then establish ground rules by providing students with an overview of what you expect of them and how you will conduct the lesson. Last, make a smooth transition into your presentation.

The introduction only represents small amount of the time spent in a lesson, but its importance cannot be overemphasized. Students will form their first impression of you during your introduction. Since you only get one chance to make a first impression, make a good one. Use the Introduction to get the attention of and to motivate every student in your class.

The **presentation** is the part of the lesson in which you teach the lesson objectives. The lesson plan outlines the learning objectives and provides all the technical support you need for your presentation. As you use this material in your teaching, apply the law of primacy. Begin teaching the new information at a level that students can understand; move from the known to the unknown. Teach information in a logical sequence, making associations to previously learned information. Use examples and analogies to appeal to different learning styles and to reinforce the learning process. Actively involve your students throughout the presentation. Ask questions, plan group exercises, encourage discussions and note taking. Use training aids at appropriate times to support explanations and to stimulate and maintain student interest. Many times, the training aids will prompt student questions that can lead to a class discussion. While you want to encourage discussions, keep in mind that you have a limited amount of time to teach each lesson. Make effective use of the training time allotted. Don't get bogged down in discussions that do not relate directly to the lesson objectives. Control the pace of the instruction so that you will have enough time to properly close your lesson.

In the review or **summary,** recap the information taught in the presentation. Go over the main discussion points of your lesson; don't try to reteach it. Ask questions that help students mentally review what has been taught. As your students respond, reinforce important points (safety, steps of procedure, concepts, etc). Clarify and correct misconceptions and errors so that students don't leave the class with poor understanding. Finish your lesson strongly with positive statements about the importance of the topic, its relationship to the job, and the responsibilities of the students.

The lesson method is the most flexible and perhaps the most useful of all the methods in the training environment. The use of questions and visual aids contributes to maximum class activity and better maintains student attention. The student involvement builds teamwork and helps students understand their responsibility toward learning. The lesson method develops more positive attitudes and provides motivation, not only from the instructor's viewpoint but" from the viewpoint of the group itself. As a Navy Instructor, resist the temptation to lecture; instead use the positive aspects of active student involvement.

DEMONSTRATION

The basic, and most often used, method of instruction for teaching skill-type subjects is the demonstration method. It covers all of the steps your students need to learn a skill in an effective learning sequence. This method always includes a demonstration step and a performance step and allows you to use other steps as needed.

DEMONSTRATION STEP

Related to every Navy skill, mental or physical, is a body of background knowledge students must know to perform the skill properly. You can best teach some kinds of background knowledge in a standard classroom with adequate provisions for comfortable seating and for the display of training aids. You must present other kinds of background knowledge by actual demonstrations conducted in laboratories.

To present background knowledge and develop proper attitudes, vary your use of the learning techniques discussed in earlier chapters. Use the following techniques when giving an actual demonstration:

- Position the students and training aids properly. If you direct the students to gather around a worktable or a training aid, make sure every student has an unobstructed view.
- Show and explain the operations. Perform the operations in step-by-step order. Whenever possible, present the telling and doing simultaneously. Do not hurry; you will not normally emphasize speed in performing operations or in moving from one operation to another in the demonstration step. Make certain the students understand the first step before you proceed to the second, and so on. Repeat difficult operations. Pause briefly after each operation to observe student reaction and to check student comprehension.
- Observe safety precautions. Rigging a safety line, donning a safety mask, or tagging an electric cable may take a few more seconds, but you have not wasted the time. Instead, you have impressed the students with the importance of exercising extreme care in dealing with potentially dangerous equipment.
- Give proper attention to terminology. Call each part of a training aid by its proper name each time you call attention to it. Getting students to retain the correct nomenclature requires more than just mentioning the name. The following suggestions should prove helpful:
  - — List the names of parts.
  - — Refer students to any available chart that shows the parts and names of parts.
  - — Conduct a terminology drill on the parts of the training aid while the aid is assembled or disassembled, as appropriate.
- Check student comprehension carefully. Ask questions during the demonstration step that require the students to recall nomenclature, procedural steps, underlying principles, safety precautions, and the like. Watch the class for reactions indicating lack of attention, confusion, or doubt; but do not depend solely upon visual observations.

When teaching skills, such as donning an oxygen breathing apparatus (OBA), in which a distinction between right and left is important; ask an assistant instructor or a well-coached student to help you. Ask the assistant to stand so that the class may see what he or she is doing. Then direct the assistant in performing the activity while you observe the reaction of the students.

Remember the law of primacy when performing the demonstration step. Always proceed from simple to complex in logical sequence; show the correct way to perform the steps the first time you demonstrate them. Along with teaching a skill, develop proper attitudes, such as the desire to perform safely, and the desire to exercise economy of time and effort.

REPETITION STEPS

When using the demonstration method, you will always provide a demonstration step and a performance step. Generally, you will include one or more repetition steps between the demonstration step and the performance step.

In deciding how many and what kinds of repetition steps you should include, consider several elements, the most important being the complexity of the skill. As a general rule, the more complex the skill, the greater the need for repetition steps. Also consider the nature of the skill. For example, some skills involve visual signaling in which speed is important. Other skills may involve ease of manipulation, conservation of materials, and safety. Always consider the ability of the students to acquire the skill and the amount of time available for training.

Four repetition steps used with good results in Navy schools are described in the following paragraphs:

Instructor repetition step

When using this step, repeat the job without noticeable interruptions, restating the procedure and the important safety factors as you perform the steps. This step has two important purposes: to show continuity (how the procedural steps follow each other under actual operating conditions); and to set standards of ease, speed, and accuracy. Related techniques of instruction are as follows:

- Introduce the step properly. Motivate the students to pay close attention by explaining the nature of the step and by stressing the primary and secondary values.
- Perform the job with the proper degree of ease, speed, and accuracy. Streamline your oral explanations to the point that they do not hinder your performance. The proper degree of speed is the standard speed you expect the majority of students to attain by the end of the scheduled practice period. A lower standard may fail to challenge the average and fast learners; a higher standard may cause many students to feel the goal is impossible to reach.
- Avoid any activity that might break the continuity of your performance. For example, discussion or questions during this step may distract you as well as the students. However, give students an opportunity to ask questions at the conclusion of the instructor repetition step. You may need to include more than one instructor repetition step.

Student repetition step

In the student repetition step, select a student to repeat the job, restating the procedure and the important safety factors as the student performs the steps. This step will motivate the students by proving that they can do the job with the instruction given. It will show you those areas of instruction you need to strengthen.

One of the advantages of this step over an instructor repetition step is the great amount of student interest generated when a student, rather than the instructor, performs the job. The other students will put themselves in the selected student's place and perform the job mentally. Related techniques of instruction are as follows:

- Introduce the step properly. Motivate the students to pay close attention by explaining the nature of the step and what the selected student must do. In teaching a mental skill involving computation, set up the problem as part of the introduction. Always use new values (not those used in your demonstration step) in the problem the student will solve.
- Call upon a student from the average learner group to perform the job.

- Give the selected student adequate directions. These directions should include where to stand, what to do, and how to hold and manipulate training aids. Direct the student in the use of any other techniques that would benefit the class.
- Correct errors, but do so in a constructive fashion. Remember that the selected student is under some degree of mental pressure. Give the student an opportunity to correct his or her own errors before calling upon other students to help. Avoid the use of mechanical guidance. When the student has completed the job provide positive reinforcement and feedback.

Group performance repetition step

When using the group performance repetition step, repeat the job slowly, one step at a time, while the students observe and imitate you, one step at a time. Use this step for teaching simple and nondangerous physical skills, such as knot tying, sending semaphore, and performing the manual of arms. To use this step, you must be able to readily see the students' movements and they must be able to see yours. Also use it to teach mental skills, such as solving mathematical or maneuvering problems or filling in forms. The following are related techniques of instruction:

- Position the students properly. The position should provide an unobstructed line of vision both for you and for students.
- Introduce the step properly. Cover orally the general plan. Stress the need for close observation and exact imitation; the need for the students to keep in step with and not to get ahead of you; and the need for students to hold and manipulate training aids (if any are used) so that you can easily see each student's work.
- Perform the job properly, one step at a time. For the first repetition, explain the movements or operations as you perform them. For subsequent repetitions, you may use briefer directions. Use the techniqum discussed in the section on the demonstration step.
- Correct errors. Call attention to errors, demonstrate the correct movements, and then require the students to repeat the movements correctly. Remember that this is a repetition step only. It does not take the place of the performance step, during which students practice individually until they have attained the required standards of proficiency.

Coach-Pupil repetition step

The Coach-pupil repetition step requires you to divide students into small groups. If a group consists of two students, one (as the pupil) performs the job while the other (as the coach) checks the "pupil's" performance. After the pupil has acquired a certain degree of proficiency, they reverse positions. This step is particularly useful in imparting skills in which performance involves potential danger to personnel or equipment; for example, firing small arms or troubleshooting electronics equipment. You use a job sheet with this repetition step. The following are related techniques of instruction:

- Introduce the step properly. Assemble the students in one group, and give all necessary preliminary instructions. Include the location of each coach and pupil group in the training area, the time allowed each pupil to practice, and the specific duties of the coach and pupil.
- Position the small groups properly. Make a preliminary check to ensure that all groups are in their assigned positions and that the coach and pupil relationship is being observed.
- Maintain adequate supervision. Although theoretically the coaches are acting in the capacity of assistant instructors, they are still students. Maintain close supervision over all groups to ensure the students are observing safety rules and regulations and are making good use of the available time.

PERFORMANCE STEP

The performance step is the step in which the students practice under supervision until they have attained the required proficiency. During this step, the students apply what they have previously learned as a result of the preceding demonstrations. Consequently, the term *application* or *supervised application* may be used to identify the activity in which the students are engaged.

The performance step involves many kinds of application. Some skills (knot tying, welding, machinery repair) result in a finished product. The application of such skills consists of students practicing a procedure until they reach the required standards of ease and precision. Normally, speed is not important. Other skills (typing, visual signaling, radio code receiving) involve speed and accuracy. The application of these skills consists of students practicing until they reach the required proficiency in speed and accuracy.

Broadly speaking, the performance step involves several instructor duties. You must brief the students on the application activity, organize the students into working groups, supervise the activity, reteach as necessary, evaluate the results, and keep records. The following instructional techniques elaborate on these duties:

- Give the students a clear understanding of the work required of them. That includes definite answers to questions of what they must do and when, where, how, and why they will perform the required work.

  - WHAT must be made, done, or practiced? Tell the students exactly what they must do. For complex skills, supplement oral instructions with instruction sheets--job sheets for physical skills and problem sheets for mental skills.

- WHEN should the required work be done? Give specific periods in the class schedule, a specified time limit, or a specific date for work completion.

- WHERE should the required work be done? Tell students whether it is to be done in classroom, workshop, laboratory, or operating space.

- HOW should the required work be done? Explain the procedures to follow as well as the style of work, degree of neatness, or degree of proficiency required.

- WHY should the required work be done? Explain how the work will affect the mission of their unit and the Navy as well as their future career.

- Provide adequate supervision. Make sure students follow the correct procedural steps, observe safety precautions, observe good housekeeping rules, take advantage of available time, and develop good work habits.
- Reinstruct the students when necessary. Teach students to be self-reliant; but if a student gets stuck at some point, help the student get started on the right path. If Several students appear to be having the same difficulty, call them aside and reinstruct them as a group.
- Evaluate the results. Determine whether or not the students have met the required performance criteria. Provide feedback to students regarding their performance in order to reinforce desired behaviors and correct areas that need improvement.
- Maintain required progress records. Keep a record of the day-to-day progress of students, or give performance tests at periodic intervals and record the results. Even when the curriculum does not specify graded applications, keep some progress records.

Do not overlook the law of effect. Students naturally want to succeed, to know their progress, and to be recognized by those in authority over them. Encourage wholesome competition, and frequently advise the students of their progress.

ROLE PLAYING

Role playing requires the students to assume active roles in a simulated situation followed by a group discussion. It is particularly useful in teaching the development of leadership or counseling skills. However, it is also used in the training of skills such as darnage control where training simulators are used to create “real life” simulations.

Many Navy jobs, such as those performed by personnel in supervisory or administrative billets, require two different kinds of skill. One kind is specialized and pertains to the occupational specialty. The other kind is skill in human relations.

Personnel can acquire this latter skill only through practice. The practice may involve the handling of actual human relations situations during on-the-job training or practice in handling simulated human relations in a school. From a training standpoint, the simulated situation is preferable because instructors can note and correct student errors. Errors made in a real life situation usually result in serious consequences, such as failure to get the job done, dissatisfaction, blame, and even reprimand. The role-playing method, therefore, is designed to

impart human relations skills without the risk inherent in training by other methods.

To use this method, first describe the situation. Then select students to play the parts of the principal characters and give them a short time to think through what they are going to say and do. Next, let the students enact the situation. Finally, under your direction, allow the group to analyze the enactment. Help them to evaluate what the characters said and did, how they felt, how they reacted, and how they might have reacted differently.

Successful role-playing provides a chance for every student to take part in the lesson. It provides vivid experiences both for the participants and for the observers. Remember, however, that students can completely develop their human relations skills only through experience.

CASE STUDY

When using the case study method, focus the attention of the students upon a specific case, which can be hypothetical or real. Collisions at sea, fires, flooding, grounding, and aircraft casualties all make good case studies. You will normally present the class with a case study in printed form. You may also present case studies through the use of pictures, films, role-playing, or oral presentations.

After presenting the case study, divide the class into groups to analyze why or how the incident happened and how it can be prevented in the future. Have each group briefly explain their conclusions so that the class can learn if more than one correct alternative exists.

The main objective of a case study is for students to learn from experience and develop problem solving skills. Use it to help students identify safety violations that have led to incidents, accidents, or casualties and how they can be prevented in the future. Proper planning and organization are your keys to getting results in using this method of instruction.

DISCUSSION

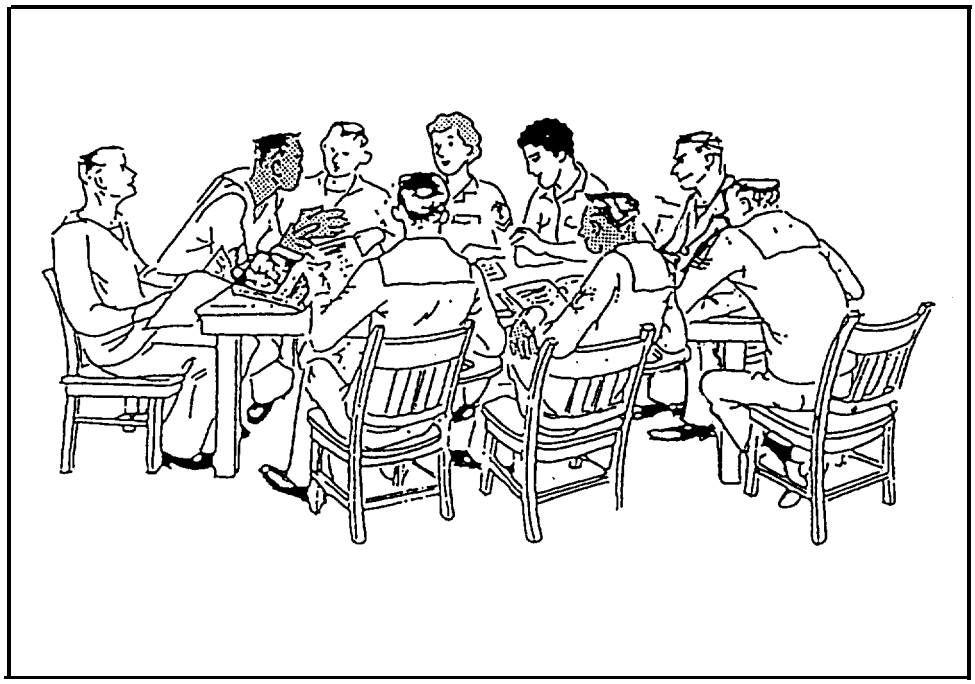
The discussion is an activity in which people talk together to share information about a topic or problem or to seek possible available evidence or a solution. When you use discussion, make sure the seating arrangement allows all participants to have eye contact with each other. This necessarily limits class size.

This method involves an interchange of ideas by the students while you provide guidance. Used alone or in combination with other methods, it stimulates every student to think constructively. It also encourages students to share their personal experiences and knowledge with their classmates and to contribute ideas as a means of solving problems.

Initiating discussion and channeling students' thinking and responses along predetermined lines is called "directed discussion." This method is useful in teaching skills such as problem solving and understanding cause-and-effect relationships.

Directed discussion is often used in training that is conducted for the purpose of developing favorable attitudes toward a subject or situation. When that is your purpose, directed discussion

gives students more freedom to express their opinions. The success of directed discussion depends to a large extent on your leadership.



As in previous methods discussed, the success of a discussion depends on careful planning. Remember that some elements of the discussion method are included in every other method of instruction except for a straight lecture. Your goal in using the discussion method is to actively involve your students in the learning process. The old Chinese proverb, "I hear and I forget, I see and I remember, I do and I understand," certainly applies in the training arena. Strive for maximum student involvement.

SUMMARY

Every course you teach will require you to impart knowledge to, and develop the skills of your students. In teaching those knowledge and skills you may use different instructional methods. A combination of methods allows you to add variety to reach the diverse group of students you may have. Your skill and flexibility in using the different methods will be the determining factor in how effective the training is in accomplishing the objectives of the course of instruction.

The learning objectives determine the primary method you will use in a given training setting. As a Navy instructor, you must be competent to use each of the methods dictated for your particular courses. That requires research, observation, and practice. You can never learn too much about training. Constantly strive for improvement and mastery.